What is claimed is:

- A sustained release composition comprising a cationic active agent, and a
 polyanionic water-soluble complexing polymer of sufficient molecular weight that it forms a
 gel when mixed with said active agent.
 - 2. A composition as in claim 1 further comprising calcium sulfate.
- 3. A composition as in claim 1 further comprising a mixture of phosphates, which includes tricalcium phosphate.
 - 4. A composition as in claim 1 further comprising hydroxyl apatite.
- 5. A composition as in claim 1 wherein said complexing polymer is at least two complexing polymers of different molecular weight.
- 6. A composition as in claim 1 wherein said active agent is an anti-infective selected from the group consisting of gentamicin, azithromycin, clarithromycin, doxycycline, minocycline and lincomycin, clindamycin, amikacin, vancomycin, tobramycin, nystatin, and amphotericin B.
- 7. A composition as in claim 1 wherein said active agent is an anesthetic selected from the group consisting of dibucaine, tetracaine, procaine, etidocaine, bupivacaine, mepivacaine, and prilocaine.
- 8. A composition as in claim 1 wherein said active agent is an opioid/analgesic selected from the group consisting of fentanyl, sufentenil, morphine, methadone, etorphine, levorphanol, levallorphan, butorphenol, buprenorphine, oxycodone, hydromorphone, propoxyphene, naloxone, naltrexone, nalorphine, nalbuphine, nalmefene, codeine, oxymorphone, and dermorphine.
 - 9. A composition as in claim 1 wherein said active agent is an anti-tumor agent.
- 10. A composition as in claim 1 wherein said active agent is a CNS agent selected from the group consisting of acepromezine, prochlorperazine, clomipramine, ondansetron, sertraline, doxazosine, chlorpromazine, and atropine.

- 11. A composition as in claim 1 wherein said complexing polymer is selected from the group consisting of dextran sulfate, carboxymethylcellulose, and pentosan sulfate.
- 12. A composition as in claim 1 wherein said complexing polymer is dextran sulfate (Na).
- 13 A composition as in claim 12 wherein said complexing polymer is dextran sulfate (Na) of molecular weight 500,000 or higher.
- 14. A composition as in claim 1 wherein said complexing polymer is carboxymethylcellulose.
- 15. A composition as in claim 1 wherein said complexing polymer is L-carboxymethylcellulose.
- 16. A composition as in claim 1 wherein said complexing polymer is M-carboxymethylcellulose.
- 17. A method of treating an infection in a mammal comprising administering to said mammal a sustained release composition comprising a cationic anti-infective and a polyanionic water soluble complexing polymer of sufficient molecular weight that it forms a gel with said anti-infective.
- 18. A method of treating bone sepsis, joint sepsis, an infected joint prosthesis, a diabetic foot infection, or periodontal disease, in a mammal comprising administering by injection to said mammal a composition comprising active agent selected from the group consisting of gentamicin, azithromycin, clarithromycin, doxycycline, minocycline and lincomycin, clindamycin, amikacin, vancomycin, tobramycin, nystatin, and amphotericin B. and a complexing polymer of sufficient molecular weight that it forms a gel with said anti-infective.
- 19. A method of systemically treating an infection in a mammal comprising administering subcutaneously to said mammal a composition comprising active agent selected from the group consisting of gentamicin, azithromycin, clarithromycin, doxycycline, minocycline and lincomycin, clindamycin, amikacin, vancomycin, tobramycin, nystatin, and amphotericin B and a complexing polymer.

- 20. A method of regionally blocking nerves or treating localized pain in a mammal comprising administering by injection to said mammal a composition comprising an anesthetic selected from the group consisting of dibucaine, tetracaine, procaine, prilocaine, etidocaine, bupivacaine, mepivacaine, and a complexing polymer.
- A method of treating pain in a mammal comprising administering to said mammal a composition comprising an active agent selected from the group consisting of oxycodone, morphine, fentanyl, sufentanil, and hydromorphone, and a complexing polymer.
- 22. A method as in claim 21 wherein said complexing polymer is at least two complexing polymers of different molecular weight.
- 23. A method of treating drug addiction in a mammal comprising administering to said mammal a composition comprising an active agent selected from the group consisting of methodone, buprenorphine, naloxone, and naltrexone, and a complexing polymer.
- 24. A method of treating cancer in a mammal comprising administering to said mammal a sustained release composition comprising a cationic anti-tumor agent and a polyanionic water soluble complexing polymer.
- 25. A molded prosthesis comprising a prosthesis including a sustained release composition comprising a cationic active agent selected from the group consisting of gentamicin, azithromycin, clarithromycin, doxycycline, minocycline and lincomycin, clindamycin, amikacin, vancomycin, tobramycin, nystatin, and amphotericin B., and a polyanionic water soluble complexing polymer of sufficient molecular weight that it forms a gel with said active agent.
- 26. A method of producing a sustained release gel composition comprising mixing a cationic active agent and a polyanionic water soluble complexing polymer of sufficient molecular weight that it forms a gel with said active agent.
- 27. A method of producing a sustained release composition comprising mixing a cationic active agent and a polyanionic water soluble complexing polymer of sufficient molecular weight that it forms a gel with said active agent, drying the gel, grinding the dried gel to a powder, and suspending the powder in a suspending agent.

- 28. A method of producing a sustained release composition comprising mixing a cationic active agent and a polyanionic water soluble complexing polymer of sufficient molecular weight that it forms a gel with said active agent, and adding calcium sulfate to the gel.
- 29. A method as in claim 28 wherein the calcium sulfate is calcium sulfate hemihydrate.
- 30. A method as in claim 28 wherein the calcium sulfate is calcium sulfate dihydrate.
- 31. A composition comprising a mixture of at least two polymer-drug complexes each of which contains a distinct active ingredient.
- 32. A composition comprising a solid polymer drug complex suspended in a liquid polymer-drug complex.
- 33. A composition comprising a polymeric anion with a poorly soluble cationic drug complex of low molecular weight.
- 34. A composition comprising a neutral drug entrapped within a cross-linked reaction product of a polymeric anion and a cation cross-linking agent.